



FUNDING RENEWABLES AND LOW-CARBON MINING

In this Q&A Interview, **Frank Des Rosiers**, Assistant Deputy Minister, Innovation and Energy Technology at Natural Resources Canada provides critical insight into the Canadian Government's support for renewables and low-carbon technologies for the mining sector.

Funding Renewables and Low-Carbon Mining

Q&A with **Frank Des Rosiers**, Assistant Deputy Minister, Innovation and Energy Technology, **NATURAL RESOURCES CANADA**



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To position Canada as a leader in the emerging low-carbon economy, the Canadian Government recognizes the need to support the decarbonization of mining and has earmarked \$2.3 billion to support the development, commercialization and use of clean technologies.

This funding will provide options to mining companies, renewables and low-carbon technology providers, as well as remote communities to transition away from fossil-fuel based power and integrate carbon reduction initiatives. In this Q&A interview, Frank Des Rosiers, Assistant Deputy Minister, Innovation and Energy Technology at Natural Resources Canada (NRCan) provides details on these funding opportunities.

Energy and Mines: How do renewables and low-carbon technologies for mines fit with NRCan's current goals and initiatives?

Frank Des Rosiers: In recognition of this opportunity, Budget 2017 announced more than \$2.3 billion to support the development, commercialization and use of clean technology in Canada, as well as comple-

Editor's note: Marc Wickham, Director, Energy Science & Technology Programs, **Natural Resources Canada** will provide further details on these funding opportunities at the **Energy and Mines World Congress**, Nov 27-28, at the Hilton Toronto. www.worldcongress.energyandmines.com

mentary large-scale support for economy-wide innovation. This includes:

- \$155 M over four years to support clean technology research, development and demonstration (RD&D) in Canada's mining, energy and forest sectors; and
- \$53 M per year, ongoing, for clean energy RD&D for climate change mitigation, including R&D by national laboratories and R&D and small demonstration projects with external participants.

Budget 2017 also announced more than \$800 million for energy-related green infrastructure demonstrations and a deployment program to be delivered by NRCan, including reducing reliance on diesel fuel in rural and remote communities, among others.

These investments support the implementation of the Pan-Canadian Framework on Clean Growth and Climate Change and our Mission Innovation objective to accelerate clean energy technology innovation, and are being made collaboratively with other levels of government and the private sector.

Furthermore, NRCan's Green Mining Initiative (GMI) brings together research partners and industry to develop integrated solutions to mining's key environmental and competitive challenges. The GMI aims to develop collaborative approaches and share scientific knowledge in key research areas across the mining sector.

One of the GMI's core areas focuses on improving energy efficiency in mining, which supports climate change mitigation. This work includes research and development



(R&D) in several areas, including: reducing energy consumption in mining, improving automation for energy efficiency, and replacing diesel in underground mines.

Recently, Minister Carr participated in the 2017 Energy and Mines Ministers' conference where Canada's federal, provincial and territorial ministers responsible for mines committed to work together on the development of a Canadian Minerals and Metals Plan to help position mineral development in Canada for long-term success. The plan will serve as a shared vision for mineral exploration and mining in Canada and will draw upon Canada's strengths and collaboration among industry, Indigenous peoples, provincial and territorial governments and civil society.

“GREEN MINING, THROUGH THE DEVELOPMENT AND DEPLOYMENT OF CLEAN TECHNOLOGIES THAT REDUCE ENVIRONMENTAL IMPACTS, WILL BE CRITICAL TO ENSURING THAT OUR MINERAL INDUSTRY REMAINS COMPETITIVE AND PROSPEROUS IN A WORLD THAT INCREASINGLY VALUES SUSTAINABLE PRACTICES.”

E&M: Can you tell us a bit more about the funding opportunities for renewables deployment for mines that NRCan is leading?

FD: NRCan will be launching the Clean Growth in the Natural Resource Sectors Program this fall. Funding of \$155 million will be delivered to support clean technology RD&D including commercial installations in Canada's natural resource sectors. This applies specifically to the energy, mining and forestry sectors, and funding will be allocated equally between the three natural resource sectors.

The program aims to advance emerging technologies toward commercial readiness, enabling natural resource operations



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to reduce their impacts on air, land and water, enhancing competitiveness and creating jobs. Funding will be open to natural resource & clean technology firms, federal researchers, academia and consortia.

The program, to run from 2018 to 2021, encourages multi-jurisdictional collaboration by only supporting projects of mutual interest with provinces and territories. Canada's federal, provincial and territorial governments will work with the mining industry, innovation providers, and other mining stakeholders to support robust clean technology projects.

NRCan also recently launched processes for five energy-related programs under the Government's Green Infrastructure Phase II initiative. Within the Clean Energy for Remote Communities Program, which is one of the five programs valued at \$220 million

“NRCAN WILL BE LAUNCHING THE CLEAN GROWTH IN THE NATURAL RESOURCE SECTORS PROGRAM THIS FALL. FUNDING OF \$155 MILLION WILL BE DELIVERED TO SUPPORT CLEAN TECHNOLOGY RD&D INCLUDING UP TO FIRST COMMERCIAL INSTALLATIONS IN CANADA’S NATURAL RESOURCE SECTORS.”

over six years, the Government has committed to reducing reliance on diesel fuel in Canada’s remote, Northern and Indigenous communities and industrial sites by supporting a transition to more sustainable energy solutions. Under the CERC Program, mining companies could apply under the following components:

- **Innovative Demonstrations to Reduce Diesel Use.** This area seeks opportunities to reduce the use of diesel fuel in off-grid, remote and Northern communities (Indigenous and non-Indigenous) through innovative technology demonstrations. Demonstrations could include demand reduction through energy efficiency technologies, renewable energy technologies (including but not limited to: solar, wind, tidal, run-of-stream, bioenergy and geothermal), energy storage and/or smart grid technologies, waste-to-energy, combined heat and power, clean transportation, and microgrid optimization.
- **Deployment of Renewable Energy Technologies.** This component seeks opportunities to reduce reliance on diesel in off-grid, remote and Northern communities (Indigenous and non-Indigenous) and industrial sites through the deployment of commercially-available renewable energy technologies for electricity and heat production, such as hydro, wind, solar, geothermal and bioenergy.
- **Bioheating Program to Reduce Fossil**

Fuel Use. This component seeks projects that reduce reliance on fossil fuels in rural and remote communities by supporting the installation or retrofit of proven biomass-based heating or combined heat and power systems for community or industrial applications, as well as business development activities for biomass supply chains.

E&M: What role do you see for Government to play in supporting the energy diversification and decarbonization of mining?

FD: The Government continues to play a role in supporting the Canadian mining industry in improving its sustainability and competitiveness - in line with the transition to a clean growth economy. The mining industry has al-

“WITHIN THE CLEAN ENERGY FOR REMOTE COMMUNITIES PROGRAM, WHICH IS ONE OF THE FIVE PROGRAMS VALUED AT \$220 MILLION OVER SIX YEARS, THE GOVERNMENT HAS COMMITTED TO REDUCING RELIANCE ON DIESEL FUEL IN CANADA’S REMOTE, NORTHERN AND INDIGENOUS COMMUNITIES AND INDUSTRIAL SITES BY SUPPORTING A TRANSITION TO MORE SUSTAINABLE ENERGY SOLUTIONS.”

ready made important strides in this regard. Green mining, through the development and deployment of clean technologies that reduce environmental impacts, will be critical to ensuring that our mineral industry remains competitive and prosperous in a world that increasingly values sustainable practices.

As mentioned above, the Government has made significant new investments in clean technology that will enable further innovation and technology adoption in the mining sector. As well, the Government remains committed to encouraging the participation of new and emerging small- and medium-sized enterprises in the development of next-generation of mining technologies, which will position Canada as leader in the emerging low-carbon economy and at the forefront of a high-tech transition for the mining sector.

E&M: What are you looking forward to at the Energy and Mines World Congress, Nov 27-28, Hilton Toronto?

FD: The Energy and Mines World Congress brings together key partners in the mining and energy industries. I am looking forward to this opportunity to continue NRCan’s engagement and dialogue with companies, technological experts, and other participants. The theme of this year’s Congress, Decarbonizing the Mining Sector, is very relevant and timely. I look forward to sharing further information about federal clean technology policies and programs available to support the innovation and adoption of clean technologies in the mining sector. ■

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Understand how carbon is driving energy choices in the mining sector from:



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- Understand how carbon risk is driving new energy choices for the global mining sector
- Connect directly with energy and climate leaders from major and mid-tier mining companies actively pursuing alternative energy options
- Gain essential insight on new funding opportunities for renewables for mines
- Hear the latest international case studies on renewables integration and alternative power options for remote mines
- Benefit from 2 + days of networking with senior mining, energy, finance and government representatives
- Learn how Canadian mines are responding to and preparing for carbon pricing in 2018
- Plus get the latest updates on energy cost savings via storage, digitization and automation for mines

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